

EXHIBIT E-6

LICENSED KWGS, Tulsa, Oklahoma CALCULATED CONTOURS

KWGS.60

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DISTANCES TO CONTOURS (Kilometers):

Frequency: 89.5000 MHz

F(50,50) Curves Number of Contours: 1

AZ (deg)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 60.0
78.0	350	17.00	69.0
88.0	347	17.00	68.7
98.0	343	17.00	68.5
108.0	339	17.00	68.2
118.0	339	17.00	68.2
128.0	333	17.00	67.7
138.0	329	17.00	67.5
148.0	323	17.00	67.0
158.0	327	17.00	67.3

DISTANCES TO CONTOURS (Kilometers):

Frequency: 89.5000 MHz

F(50,10) Curves Number of Contours: 1

AZ (deg)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 54.0
78.0	350	17.00	101.0
88.0	347	17.00	100.7
98.0	343	17.00	100.2
108.0	339	17.00	99.8
118.0	339	17.00	99.8
128.0	333	17.00	99.1
138.0	329	17.00	98.6
148.0	323	17.00	98.0
158.0	327	17.00	98.4

EXHIBIT E-7

This proposal has been examined with regard to compliance with 47 C.F.R. Sec. 73.525, concerning the potential impact on the reception of Channel 6 television stations.

For FM Channel 209, the "affected radius" from a Channel 6 television station is 196 kilometers.

There are two Channel 6 television stations located within 196 kilometers of the FM transmitter site proposed in this application. Therefore an additional study is required to show compliance with Sec.73.525 of the rules.

The fm to tv U/D ratio has been determined by reference to 47 C.F.R. Sec.73.599, Figure 1. This ratio is tabulated in this section. In accordance with the provisions of Section 73.525(e)(1)(iii) an adjustment has been made for television reception antenna directivity.

Pertinent portions of the affected Channel 6 station's 47 dBu contour have been calculated, using actual terrain data for the bearings tabulated. The appropriate FM interference contour was also calculated and tabulated. The tabulated data was then plotted on the map exhibit which is part of this section.

There is overlap of the proposed FM station 73.3 dBu 50/10 contour with the 47 dBu contour of one of the affected stations, KOTV, Oklahoma City, Oklahoma. This area of overlap is an area of 20 square kilometers, affecting 723 persons. There is no overlap of the proposed FM contour with the other impacted Channel 6 station, KEMV, Mountain View, Arkansas.

The area of overlap with KOTV, and the lack of overlap with KEMV is shown on the map portions of this exhibit section.

An exemption of the total number of persons affected is claimed, under the provisions of Section 73.525(e)(3)(iii). The entire area of theoretical interference to Channel 6 is

within the 74 dBu (city grade) contour of KFSM-TV, Channel 5, Fort Smith, Arkansas. This contour is also shown on the map portions of this exhibit.

The provisions of this section apply because the entire area of interference is located outside the affected TV Channel 6 station's Area of Dominant Influence (ADI), outside the Grade A field strength contour of the Channel 6 station, and within the predicted city grade contour of a TV Broadcast station whose only network affiliation is the same as the network affiliation of the affected Channel 6 station.

The respective network affiliations are CBS, and the station providing the city grade service to the affected area is KFSM, Channel 5, Fort Smith, Arkansas. Thus, the total number of persons affected may be subtracted, leaving a 0 balance.

FACILITIES STUDIED FOR 47 C.F.R. 73.525 COMPLIANCE

TULSA	OK	KOTV	Ch. 06+
100 kW	573 M, 1880'	HAAT	
36 1 15	95 40 32		LIC CY
KOTV, INC.		BLCT841031K	
Bearing= 298.2 °	118.2 °	Distance= 134.55 km.,	83.61 Mi.
Grade A (68 dBu)=	71.31 km.,	44.31945 Mi.	
Grade B (47 dBu)=	126.45 km.,	78.58919 Mi.	

MOUNTAIN VIEW	AR	KEMV	Ch. 06-
100 kW	424 M, 1391'	HAAT	
35 48 47	92 17 24		LIC HN
ARKANSAS EDUCATIONAL TV CO		BLET800903K	
Bearing= 77.8 °	257.8 °	Distance= 192.29 km.,	119.48 Mi.
Grade A (68 dBu)=	62.09 km.,	38.58919 Mi.	
Grade B (47 dBu)=	113.49 km.,	70.53449 Mi.	

73.599 Figure 1 U/D Ratio

FM Channel= 209
 Cutoff Distance= 196 km
 Maximum colocated power at < .4 km = 17.8 kW
 TV Contour= 47 dB
 U/D= 20.3 dB
 Total= 67.3 dB - Directional total= 73.3 dB

TABULATION OF CONTOURS EMPLOYED IN CHANNEL 6 EXHIBIT

FSMI

Page no.

PROPOSED Fort Smith Channel 209

DISTANCES TO CONTOURS (Kilometers):

Frequency: 89.7000 MHz

F(50,10) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 73.3
.0	43	.00	5.6
45.0	93	.00	8.2
90.0	138	.00	10.1
135.0	156	.00	10.7
180.0	136	.00	10.0
225.0	154	.00	10.6
270.0	104	.00	8.7
315.0	118	.00	9.3

KOTV

KOTV Grade "B" CONTOUR

DISTANCES TO CONTOURS (Kilometers):

Frequency: 83.2600 MHz

F(50,50) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 47.0
78.0	596	20.00	127.8
88.0	593	20.00	127.6
98.0	589	20.00	127.3
108.0	585	20.00	127.0
118.0	585	20.00	127.0
128.0	579	20.00	126.6
138.0	575	20.00	126.3
148.0	569	20.00	125.9
158.0	573	20.00	126.2

TABULATION OF CONTOURS EMPLOYED IN CHANNEL 6 EXHIBIT

KFSM.74

KFSM City Grade Study Page no.

DISTANCES TO CONTOURS (Kilometers):

Frequency: 77.2500 MHz

F(50,50) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 74.0
.0	315	20.00	42.8
45.0	303	20.00	42.0
90.0	382	20.00	46.6
135.0	438	20.00	49.7
180.0	448	20.00	50.2
225.0	453	20.00	50.5
270.0	383	20.00	46.7
315.0	354	20.00	45.1

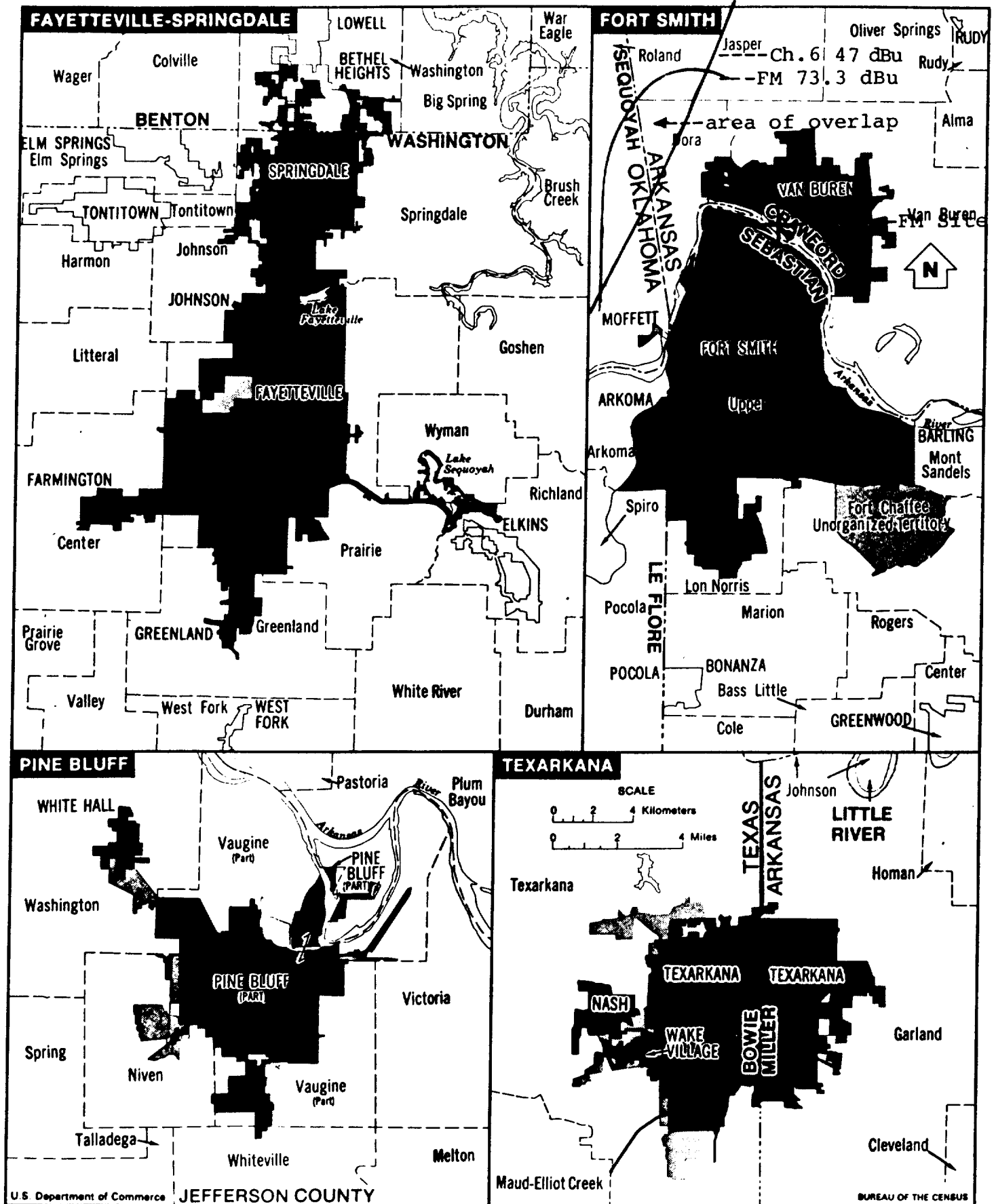
KEMV Channel 6 Grade "B"

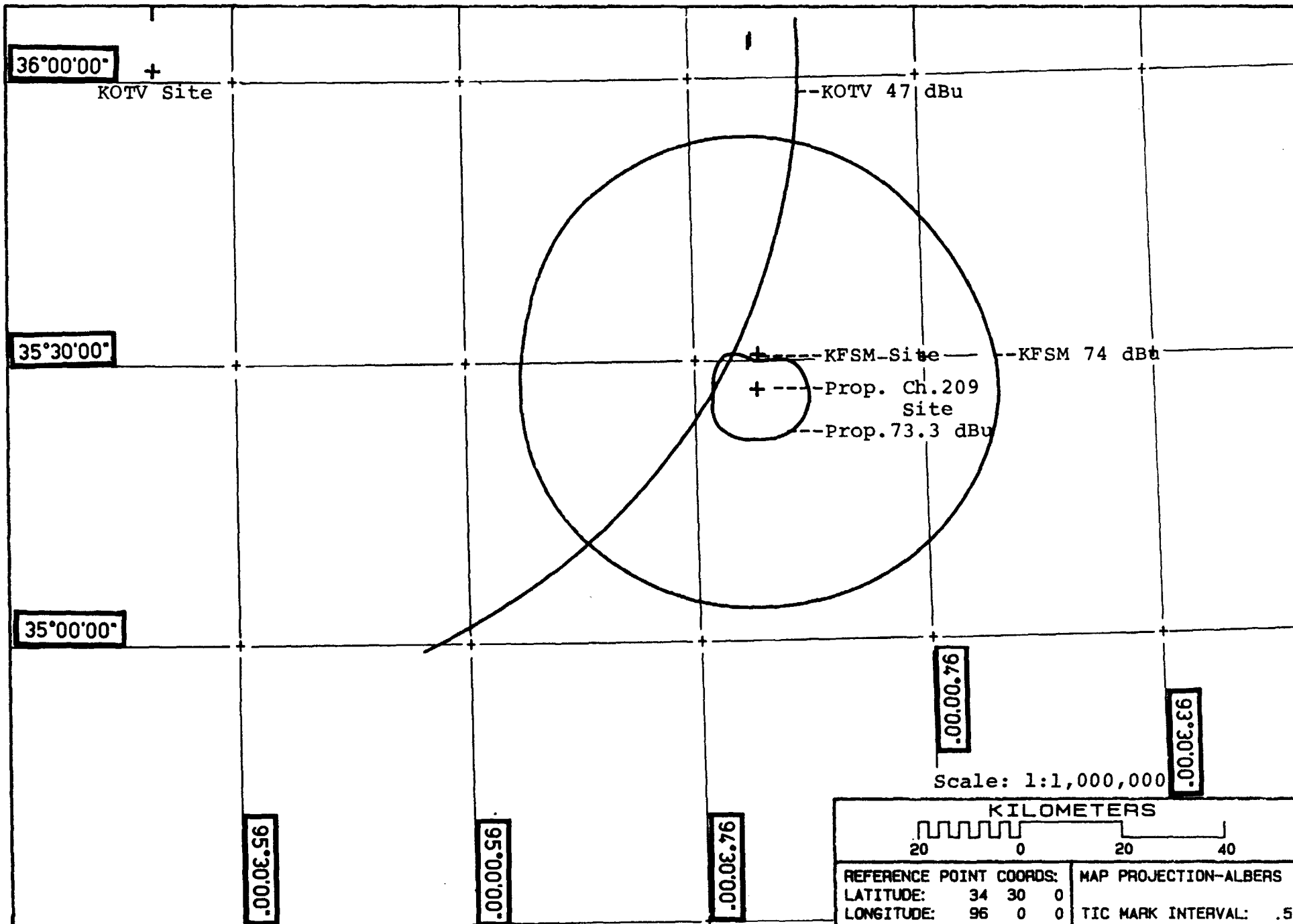
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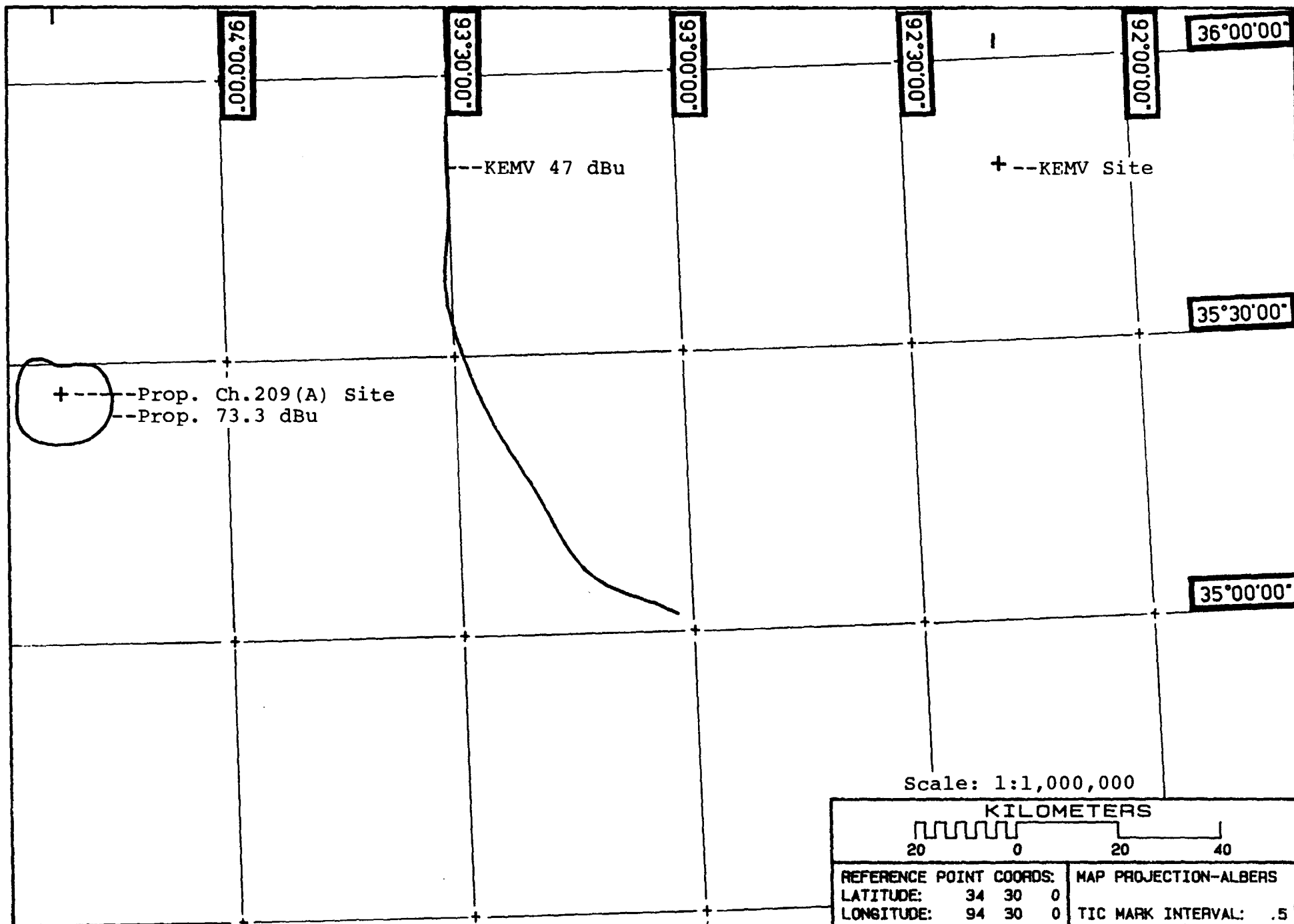
Frequency: 83.2400 MHz

F(50,50) Curves Number of Contours: 1

AZ (degs)	HAAT (m)	ERP (dBk)	CONTOUR LEVELS (dBu): 47.0
218.0	384	20.00	110.1
228.0	444	20.00	115.5
238.0	414	20.00	112.8
248.0	418	20.00	113.2
258.0	417	20.00	113.0
268.0	374	20.00	109.4
278.0	381	20.00	109.9
288.0	365	20.00	108.8
298.0	339	20.00	106.9







STUDY SHOWING COMPLIANCE WITH GUIDELINES CONCERNING
HUMAN EXPOSURE TO RADIOFREQUENCY RADIATION FROM FM
FACILITY AS PROPOSED

This proposal to add an Educational FM antenna to an existing tower structure has been evaluated for compliance with FCC guidelines concerning human exposure to radiofrequency radiation, as detailed in OST Bulletin No. 65, October, 1985.

There are no other FM Broadcast or AM Broadcast facilities in proximity to the transmitter site proposed in this application which would require study under this section. The tower proposed for use by the FM station supports various land mobile stations, which are excluded from the studies.

However, on an adjacent tower, there are three (3) Low Power Television stations (LPTV) existing or authorized. Therefore, this proposal has been studied, assuming all three of the LPTV stations to be operating. The data obtained shows that the combined station fields are below the ANSI guidelines for permitted field exposure.

The field from each station has been calculated, and the decimal fraction of the ANSI limit contributed by each station determined. The sum was then taken for the decimal fractions of the limit. The total is less than unity, therefore there is full compliance with the rules.

<u>STATION</u>	<u>FIELD</u>	<u>LIMIT</u>	<u>FRACTION</u>
K27DI	0.0058 mW/cm ²	1.9 mW/cm ²	0.003
K46BZ	0.0023	2.2	0.001
K63EG	0.0032	2.4	0.0013
Prop.FM Ch209	0.0022	1.0	0.0022
		Sum:	0.0075

METHODOLOGY FOR FM RADIATION STUDY

The EPA has developed a computer model which serves as a general means of estimating the power densities in the vicinity of typical FM broadcast stations. As is typical of such models, this frequently results in a "worst case" type of determination, as contrasted with lesser amounts of radiation which may actually be determined to exist by taking of field strength measurements. The EPA model considers the following variable factors:

- (1) Effective radiated power
- (2) Radiation center height above ground
- (3) Polarization of the transmitted signal
- (4) Type of antenna (generic)
- (5) Number of sections (elements or bays) in the array

This particular model is discussed by Gailey and Tell in EPA Report No. 520/6-85-011, April, 1985.

This model makes use of the element and array pattern product and takes into account ground reflections. It is considered to be a reasonable approach for determining the upper bounds of field intensity near transmitting towers on which FM facilities are located.

Calculations are normally made at 2 meters above the ground. Total ERP is used--adding of the vertical and horizontal components. The FCC's OST Report No. 65 provides tables listing the estimates of antenna heights required for compliance with "worst case" situations. (See Table 1.) Reasonable predictions may be made from use of those data. More specific calculations are made by computer, extrapolating the basic data, and providing a printout graphical presentation of the data.

In the case of joint use of a site by TV and FM stations, the fractional contributions are summed. If the sum of all such fractional contributions is less than unity (1.0), it is concluded that there is no problem of exceeding the ANSI guidelines.

References:

1. P. C. Gailey & R. A. Tell. "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM and TV Broadcast Services," U. S. Environmental Protection Agency, April, 1985.
2. Federal Communications Commission, OST Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Evaluating Human Exposure to Radiofrequency Radiation," by Robert F. Cleveland, October, 1985.
3. Kraus, J. D. "Antennas," McGraw-Edison Book Co., NYC, 1950

METHODOLOGY FOR TV RADIATION STUDY

The EPA has developed a computer model which serves as a general means of estimating the power densities in the vicinity of typical TV broadcast stations. As is typical of such models, this frequently results in a "worst case" type of determination, as contrasted with lesser amounts of radiation which may actually be determined to exist by taking of field strength measurements. The EPA model considers the following variable factors:

- (1) Effective radiated power
- (2) Radiation center height above ground
- (3) Polarization of the transmitted signal
- (4) Type of antenna (generic)
- (5) Number of sections (elements or bays) in the array

This particular model is discussed by Gailey and Tell in EPA Report No. 520/6-85-011, April, 1985.

This model makes use of the element and array pattern product and takes into account ground reflections. It is considered to be a reasonable approach for determining the upper bounds of field intensity near transmitting towers on which TV facilities are located.

Calculations are normally made at 2 meters above the ground. Total ERP is used--adding of the vertical and horizontal components. The FCC's OST Report No. 65 provides tables listing the estimates of antenna heights required for compliance with "worst case" situations. (See Table 1-4) Reasonable predictions may be made from use of those data. More specific calculations are made by computer, extrapolating the basic data, and providing a printout graphical presentation of the data.

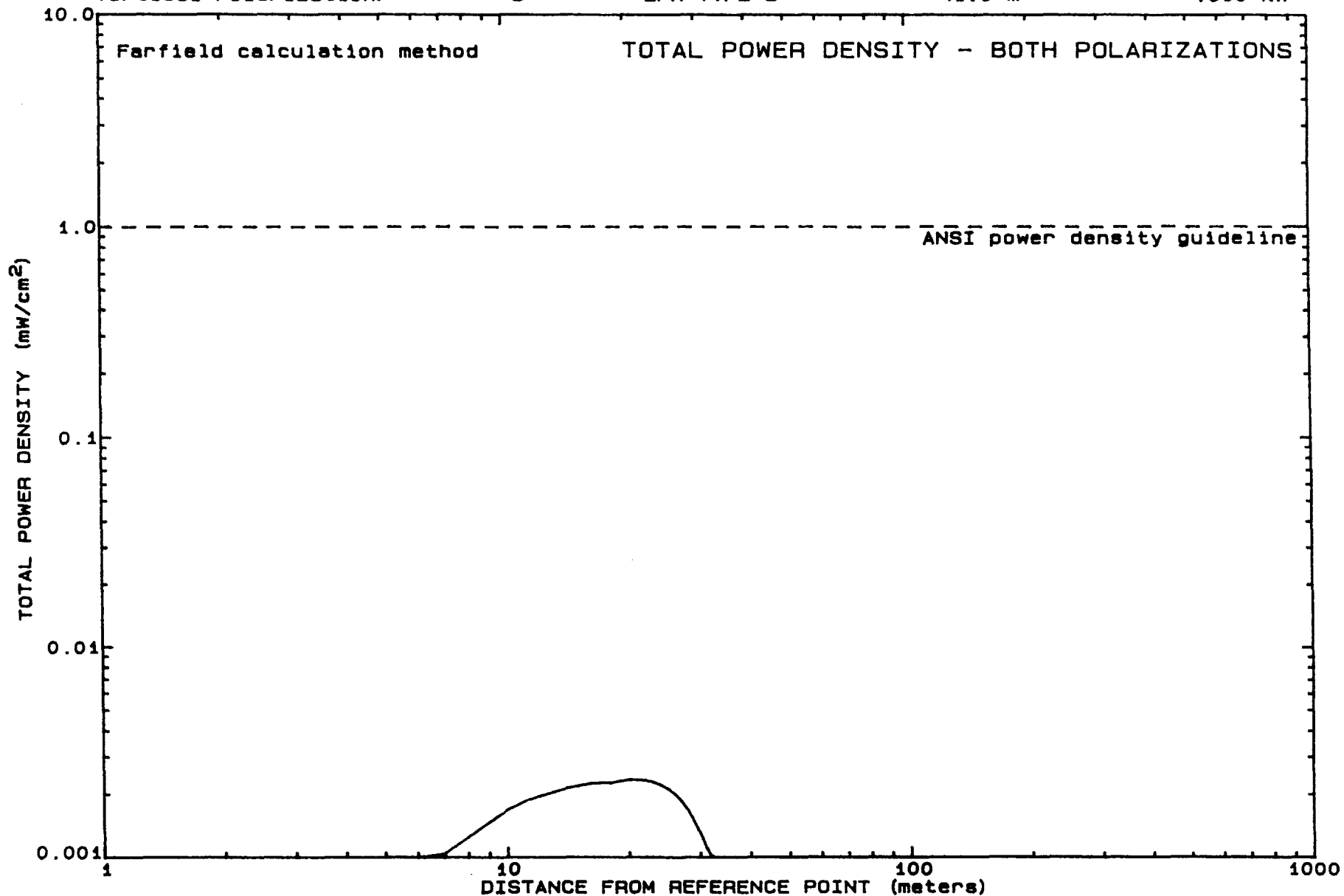
In the case of joint use of a site by TV and FM stations, the fractional contributions are summed. If the sum of all such fractional contributions is less than unity (1.0), it is concluded that there is no problem of exceeding the ANSI guidelines.

References:

1. P. C. Gailey & R. A. Tell. "An Engineering Assessment of the Potential Impact of Federal Radiation Protection Guidance on the AM, FM and TV Broadcast Services," U. S. Environmental Protection Agency, April, 1985.
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3. Kraus, J. D. "Antennas," McGraw-Edison Book Co., NYC, 1950

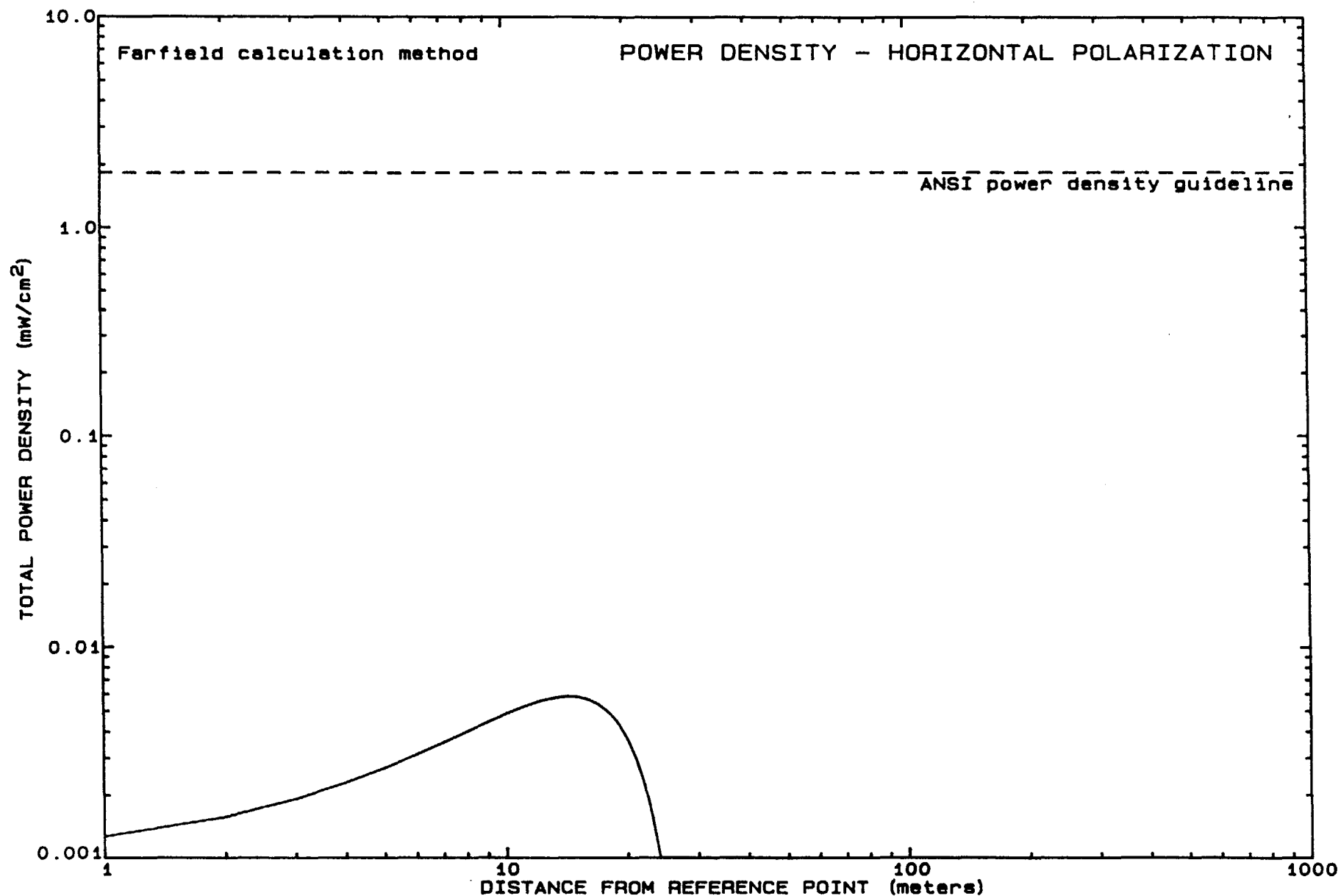
Station: BBN Frequency: 89.700 MHz Height of Observer (ARP): 2.0 Meters

	No. of Elements	Element Type	Height of Center (ARP)	Power (ERPd)
Horizontal Polarization:	3	EPA TYPE 3	41.0 m	1.000 kW
Vertical Polarization:	3	EPA TYPE 3	41.0 m	.000 kW



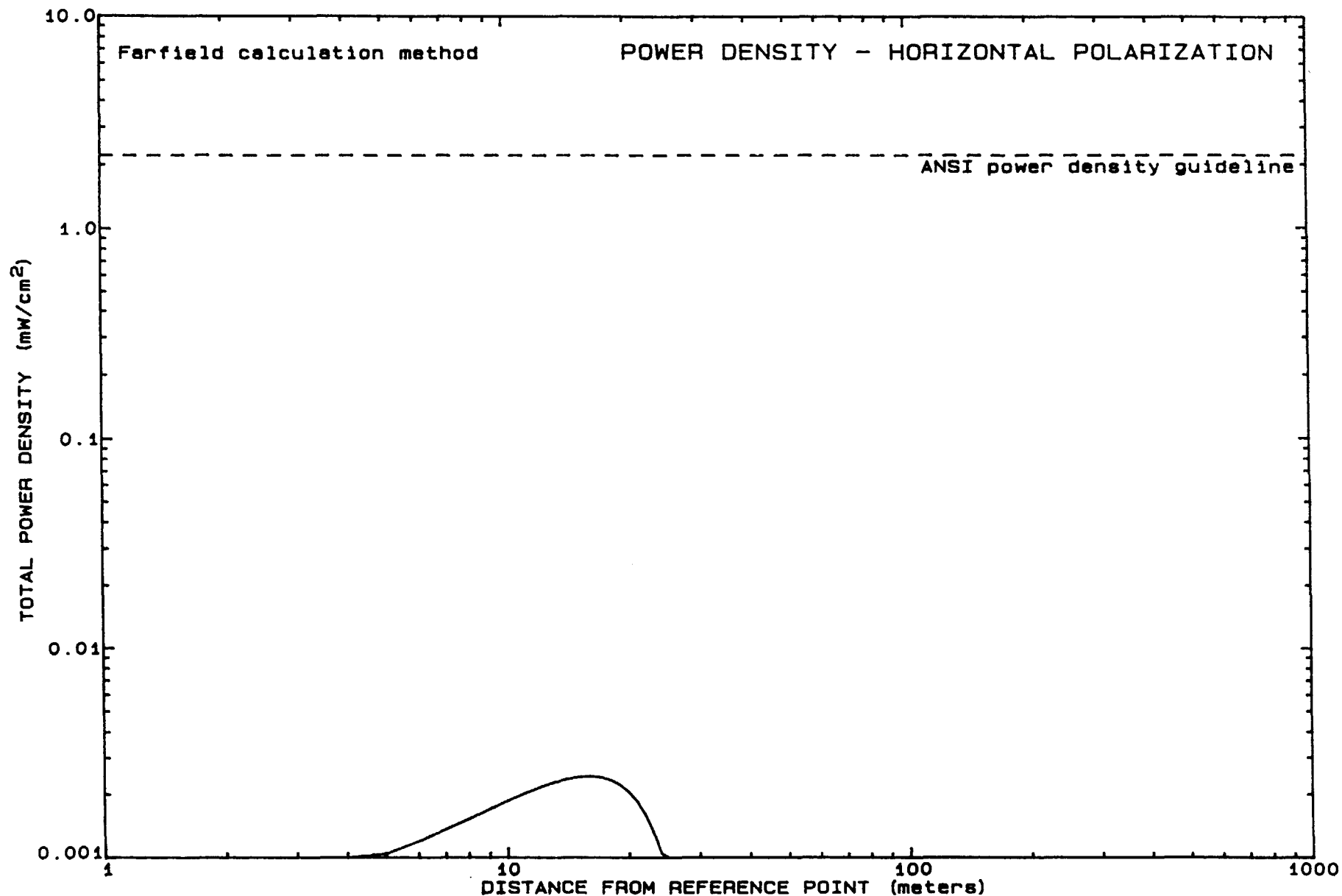
Station: K27DI Frequency: 549.260 MHz Height of Observer (ARP): 2.0 Meters

	No. of Elements	Element Type	Height of Center (ARP)	Power (ERPd)
Horizontal Polarization:	16	UHF ELEMENT	76.0 m	40.400 kW



Station: K46BZ Frequency: 663.260 MHz Height of Observer (ARP): 2.0 Meters

	No. of Elements	Element Type	Height of Center (ARP)	Power (ERPd)
Horizontal Polarization:	16	UHF ELEMENT	84.0 m	20.800 kW



Station: K63EG Frequency: 765.250 MHz Height of Observer (ARP): 2.0 Meters

	No. of Elements	Element Type	Height of Center (ARP)	Power (ERPd)
Horizontal Polarization:	16	UHF ELEMENT	64.0 m	16.900 kW

